Subject Code | 0 | 8 | 3 | **Roll No.** | | | | | |

KENDRIYA VIDYALAYA SANGATHAN, MUMBAI REGION

MONTHLY TEST-OCTOBER (SESSION 2024-25)-SET I

Subject: Computer Science (Theory) **Class: XII**

Time Allowed: 1:30 Hours **Max. Marks - 35**

General Instructions:

- *Please check that this question paper contains 19 questions.*
- *The paper is divided into 5 Sections- A, B, C, D and E.*
- *Section-A, consists of 10 Questions (Q.1 to Q.10) carrying 01 Mark each.*
- *Section-B, consists of 5 Questions (Q.11 to Q. 15) carrying 02 Marks each.*
- *Section-C, consists of 2 Questions (Q.16 and Q.17) carrying 03 Marks each.*
- *Section-D, consists of 1 Question (Q.18) carrying 04 Marks.*
- *Section-E, consists of 1 Question (Q.19) carrying 05 Marks.*
- *All programming questions are to be answered using Python Language only.*

SECTION-A

1. State `True` or `False`: **1**

All functions in Python are required to take at least one argument.

2. Write output for the following python statements: **1**

```
>>>s="hello"
>>>s.count('')  #empty string as an argument
```

3. Which among the following keywords is used to catch exceptions in Python? **1**

a) try b) except c) catch d) finally

4. Which of the following is used to write data to a CSV file? **1**

```
import csv
with open('file.csv', 'w', newline='') as file:
        w = _____________    #to write data
```

a) pickle.write(file) b) file.writer(csv)

c) csv.dump(file) d) csv.writer(file)

5. What is the main principle behind a stack data structure? **1**

a) Last In, First Out (LIFO) b) Random Access

c) Sorted Order d) First In, First Out (FIFO)

6. Fill in the blank: **1**

_____ is a communication methodology designed to deliver both voice and multimedia communications over Internet protocol.

a) VoIP b) SMTP c) PPP d) HTTP

7. Expand the following terms: RDBMS, SQL **1**

8. Fill in the blank: **1**

In MySQL, the attribute which is a candidate key but not a primary key is known as _____.

9. Fill in the blank: **1**

_____ is a non-key attribute, whose values are derived from the primary key of some other table.

a) Primary Key b) Foreign Key

c) Candidate Key d) Alternate Key

10. **Assertion (A):** IP addresses are unique identifiers for devices on a network. **Reason (R):** Two devices on the same network can have the same IP address without any issues. **1**

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true, but R is false.
d) A is false, but R is true.

SECTION-B

11. Write output for the following python code: **2**

```
tuple1 = (11, 22, 33, 44, 55 ,66)
list1 =list(tuple1)
new_list = [ ]
for i in list1:
      if i%2==0:
            new_list.append(i)
new_tuple = tuple(new_list)
print(new_tuple)
```

OR

Predict the output of the following code:

```
d = {"tea": 15, "sugar": 7, "milk": 9}
str1 = ""
for key in d:
    str1 = str1 + str(key) + "#"
str2 = str1[-3:-9:-1]
print(str2)
```

12. Write a function `Replace_Word(M)`, where `M` is the list of elements (list of fruits) passed as an argument to the function. The function should replace those fruits which start with any vowel, with the length of the word and display the updated list. **2**

For example:

If list `M` contains `["mango", "apple", "Avocado", "banana", "orange"]`

The output should be:

`['mango', 5, 7, 'banana', 6]`

OR

Write a function `LenFourWord(L)`, where `L` is the list of elements (list of words) passed as argument to the function. The function returns another list named '`indexList`' that stores the indices of all four lettered word of `L`.

For example:

`If L contains [“DINESH”, “RAMESH”, “AMAN”, “SURESH”, “RAVI”]`

The output should be:

`The indexList will have [2, 4]`

13. Mr. Ashutosh has written a poem in a text file named as "POEM.TXT". Now he wants to count number of lines which start with the character 'W' (including uppercase and lowercase) in the text file "POEM.TXT". **2**

Help him to write a user defined function CountLineW( ) in python to solve the problem.

Example: If the "POEM.TXT" contents are as follows:

```
A tiny ant goes marching by,
With little legs and wings to fly.
Carrying crumbs, oh so small,
Working together, one and all.
```

The output of the function should be:

No. of lines start with character W are: 2

14. Why does switch known as smart hub? **2**

15. **i.** Define degree and cardinality of a relation in RDBMS. **2**

OR

Define the term keys in DBMS.

ii. Ravish created a database namely BUSINESS. Now he wants to create a table in it. For this he needs to open the database that he has created. Write SQL command to open the database that is created by Ravish.

OR

Write any two advantages of DBMS.

SECTION-C

16. You have a binary file named "STATIONERY.DAT" with the following structure: **3**
{"item_no": ItemNo, "item_name": ItemName, "brand": Brand, "price": Price}

i. Write a user-defined function WriteStationery() to input data for 7 stationery items and add them to STATIONERY.DAT .

ii. Write a function CountRecord(Brand) in Python which accepts the brand name as a parameter and counts and returns the number of stationery items of the given brand that are stored in the binary file "STATIONERY.DAT".

17. **A.** **3**

Ms. Aarti has a stack named ToysStack that contains records of toys. Each toy record is represented as a list containing toy_name, brand_name and year_of_manufacture.

You as a python programmer help her to write the following user-defined functions in Python to perform the specified operations on the stack ToysStack:

i. PUSH_TOY(ToysStack, new_toy): This function takes the stack ToysStack and a new toy record new_toy as arguments and pushes the new toy record onto the stack.

ii. POP_TOY(ToysStack): This function pops the topmost toy record from the stack and returns it. If the stack is already empty, the function should display "Underflow".

iii. PEAK(ToysStack): This function displays the topmost element of the stack without deleting it. If the stack is empty, the function should display 'None'.

OR

B.

Consider a list named Space which contains the terms related to space.

Write the following user defined functions in python and perform the specified operations on a stack named MyStack.

i. Push_Term(): It checks every term from the list Space and pushes all such terms which have 5 or more characters into the stack, MyStack.

ii. Pop_Term(): It pops the terms from stack, MyStack and displays them. The function should also display "Stack is Empty" when there are no more elements left in the stack.

For Example: If the list Space contains the following data:

```
Space=["Asteroid","Comet","Cosmos","Galaxy","Crater"]
```

Then on execution of Push_Term(), the stack MyStack should store:

```
['Asteroid', 'Cosmos', 'Galaxy', 'Crater']
```

and on execution of Pop_Term(), the following output should be displayed:

```
Crater
Galaxy
Cosmos
Asteroid
Stack is empty
```

SECTION-D

18. Consider the following table named as VEHICLE : **4**

Vehicle_ID	Make	Model	Year	Colour	Price
V01	Maruti Suzuki	Swift	2020	Red	750000
V02	Hyundai	Creta	2021	White	1650000
V03	Tata	Nexon	2022	Blue	1200000
V04	Honda	City	2019	Silver	1350000
V05	Mahindra	XUV300	2020	Black	1250000
V06	Kia	Seltos	2021	Yellow	1800000
V17	Hyundai	Venue	2018	Orange	900000
V08	Renault	Kwid	2022	Green	500000
V09	Hyundai	Creta	2022	Black	1850000
V11	BMW	X1	2021	Blue	4500000

i. Write degree and cardinality of given table Vehicle.

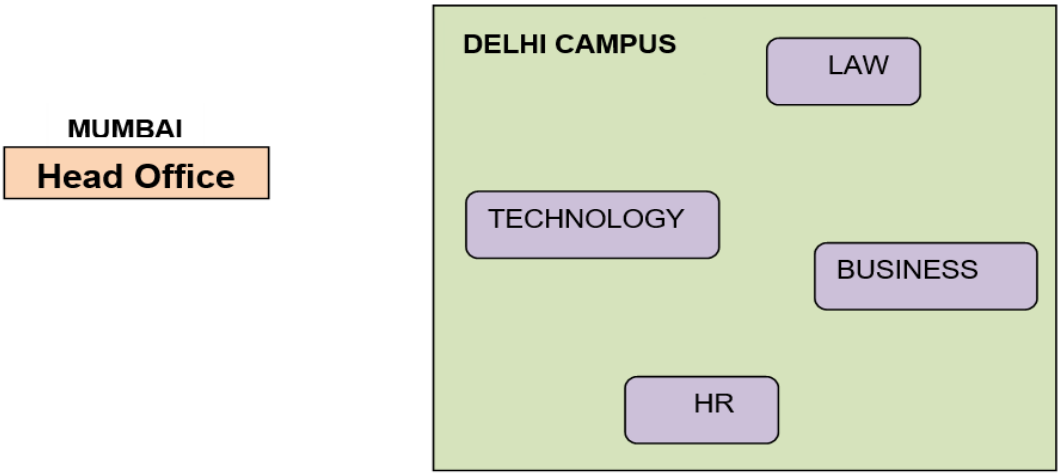
ii. Write SQL command to show description of the table Vehicle.

iii. Identify the most appropriate attribute, which can be considered as Primary key. Justify your answer.

iv. If two columns are added and 2 rows are deleted from the table VEHICLE, what will be the new degree and cardinality of the above table?

SECTION-E

19. "Glory Tech Services" is planning to set up its India campus at Delhi with its Head Office at Mumbai. The Delhi campus has 4-main blocks-BUSINESS, TECHNOLOGY, LAW and HR. You as a network expert have to suggest the best network related solutions for their problems raised in (i) to (v). **5**



Distance between various building blocks:

LAW BLOCK to BUSINESS BLOCK	40 m
LAW BLOCK to TECHNOLOGY BLOCK	80 m
LAW BLOCK to HR BLOCK	105 m
BUSINESS BLOCK to TECHNOLOGY BLOCK	30 m
BUSINESS BLOCK to HR BLOCK	35 m
TECHNOLOGY BLOCK to HR BLOCK	15 m
HEAD OFFICE TO DELHI CAMPUS	1485 KM

Number of computers in each of the Blocks:

LAW BLOCK	15
TECHNOLOGY BLOCK	45
HR BLOCK	100
BUSINESS BLOCK	30

i. Suggest the most appropriate location of the server inside the DELHI campus (out of the 4 blocks), to get the best connectivity for maximum number of computers. Justify your answer.

ii. Suggest and draw the cable layout to efficiently connect various blocks within the DELHI campus for connecting the computers.

iii. Which networking device will you suggest to be procured by the company to provide optimistic path to data and protect the data over network within the campus?

iv. Suggest network type (out of LAN, MAN, WAN) for connecting each of the following set of their offices:

a. Law & Technology Block

b. Head Office and Delhi Office

v. Company wants to connect its local offices situated in Delhi. Company can compromise with speed but cost of connectivity should be economic. Which of the following communication medium, you will suggest to be procured by the company:

a) Telephone cable

b) Twisted Pair Cable

c) Optical Fiber Cable

KENDRIYA VIDYALAYA SANGATHAN, MUMBAI REGION

MONTHLY TEST -OCTOBER 2024

Class: XII Subject: INFORMATICS PRACTICES (065)

QUESTION PAPER(SET-1)

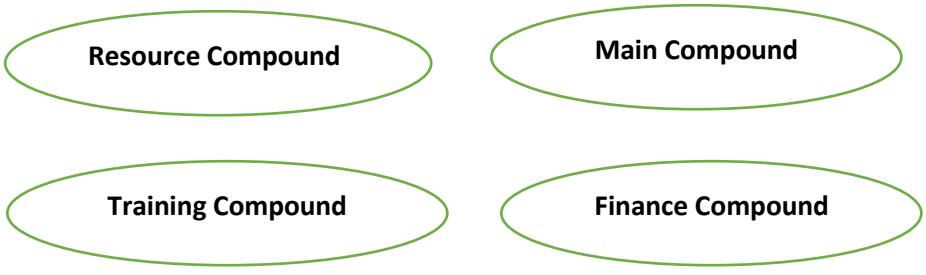
Max Marks-35 **Time Allowed: 1:30 Hours**

Note: All questions are compulsory.

Q.NO.	QUESTION	MM
1	Fill the missing statement import matplotlib.pyplot as plt marks=[30,10,55,70,50,25,75,49,28,81] plt._____(marks, bins='auto', color='green') plt.show() (a) plot (b) bar (c)hist (d)draw	**1**
2	Select MOD(6,0); (a) 6 (b) 0 (c) None (d) NULL	**1**
3	Select the device that helps to transfer the digital signals to be transferred over telephone lines: (a) Switch (b) Modem (c) Gateway (d) Repeater	**1**
4	Website stores the browsing activity through _____ (a) web page (b) Cookies (c) passwords (d) server	**1**
5	The space provided by a service provider to store website data is called _____ . (a) Webspace (b) Cloud Computing (c) Web Hosting (d) Web Store	**1**
6	_____ is a software component that adds a specific feature to an existing computer program (a) Addon (b) Plug in (c) Cookies (d) All of the above	**1**
7	The device used to connect two networks using different protocols is_____: (a) Router (b) Repeater (c) Gateway (d) HUB	**1**
	Que. 8 is ASSERTION AND REASONING based questions. Mark the correct choice as i. Both A and R are true and R is the correct explanation for A ii. Both A and R are true and R is not the correct explanation for A iii. A is True but R is False iv. A is false but R is True	
8	Assertion (A): - The Internet is a collection of interconnected computer networks linked by transmission medium such as copper wires, fiber-optic cables, wireless connections etc Reasoning (R):- World wide web is a collection of interconnected documents	**1**
9	Expand the following terms related to Computer Networks: a. HTTP b. POP3 c. FTP d.VoIP	**2**

10	Consider the following series named sports: C Cricket V Volley Ball F Football T Table Tennies K Kabaddi dtype: object Write the output of the command: print(sports[: : -3])	**2**

11	Predict the output of the following SQL queries
	i) SELECT TRIM(" ALL THE BEST ");
	ii) SELECT LEFT('INFORMATICS',5);
	iii) SELECT UPPER (MID("start up india",10));
		3

12	Differentiate between website and webpage.	**3**
13	a. Differentiate between LAN and PAN types of networks. b. Give two examples of LAN and PAN types of networks.	**1** **2**
14	Consider the data frame DF1 where following companies showing the profit rate of 4 quarters. Answer the following questions based on data frame DF1: TCS WIPRO INFOSYS PERSISTENT QTR1 80 88 66 74 QTR2 98 67 75 98 QTR3 77 93 89 92 QTR4 65 50 40 80 i) Write python code to display the profit rate of all quarters of Infosys company. ii) Write python code to display the profit rate of Qtr3 of all companies. iii) Write the output of the python code print(DF1.iat[1,1])	**3**
15	i) Give any two examples of network. ii) Give any two examples of web servers. iii) Give any two examples of web browsers.	**3**
16	Name the device for the following: i) It stands for modulator demodulator ii) It regenerates the signal iii) It is used to connect dissimilar networks	**3**
17	"Learn Together" is an educational NGO. It is setting up its new campus at Jaipur for its web based activities. The campus has 4 compounds as shown in the diagram below: 	**5**

Center to center distances between various Compounds as per architectural drawings (in Metre) is as follows :

Main Compound to Resource Compound	110 m
Main Compound to Training Compound	115 m
Main Compound to Finance Compound	35 m
Resource Compound to Training Compound	25 m
Resource Compound to Finance Compound	135 m
Training Compound to Finance Compound	100 m

Expected Number of Computers in each Compound is as follows:

Main Compound	5
Resource Compound	15
Training Compound	150
Accounts Compound	20

1. Suggest a cable layout of connections between the compounds.
2. Suggest the most suitable topology of the connection between the wings.
3. Suggest the most suitable place (i.e. compound) to house the server for this NGO. Also, provide a suitable reason for your suggestion.
4. Suggest the placement of the following devices with Justification :
(i) Repeater (ii) Hub/Switch
5. The NGO is planning to connect its International office situated in Mumbai, which out of the following wired communication link, you will suggest for a very high speed connectivity?
(i) Telephone Analog Line
(ii) Optical Fiber
(iii) Ethernet Cable

SET A

केन्द्रीय विद्यालय संगठन, मुंबई संभाग

KENDRIYA VIDYALYA SANGATHAN, MUMBAI REGION

मासिक प्रश्न पत्र सितम्बर माह 2024/Monthly test September Month 2024

कक्षा / Class : X | विषय /SUBJECT : SCIENCE

अधिकतम अंक / Maximum Marks: 40 | समय / TIME : 1.30 Hours

GENERAL INSTRUCTIONS -

1. All questions are compulsory
2. This paper has 4 sections
3. Section A contains 1 mark(Q.1 to Q.10) questions
4. Section B contains 2 (Q.11 to Q.13) and 3 (Q.14 to Q.15) mark questions
5. Section C contains 5 (Q.16 to Q.17) mark questions
6. Section D contains 4 mark (Q.18 to Q.19) competency based questions

SECTION - A

MULTIPLE CHOICE QUESTIONS (1 MARK)

Q.1. Which option correctly shows the transport of oxygen to the cell?

(a) Lungs →pulmonary vein →left atrium →left ventricle →aorta → body cells

(b) Lungs →pulmonary vein →right atrium →right ventricle → aorta → body cells

(c) Lungs →pulmonary artery →left atrium → left ventricle → vena cava → body cells

(d) Lungs →pulmonary artery →right atrium → right ventricle→ vena cava → body

Q.2. Which part of nephron allows the selective reabsorption of useful substances like glucose, amino acids, salts and water into the blood capillaries?

(a) Tubule (b) Glomerulus (c) Bowman's capsule (d) Ureter

Q.3. When we enter a dark room coming from outside, immediately the things inside the room do not appear clear to our eyes. This is because

(a) Pupils do not open at all in the dark (b) Pupils take time to adjust

(c) Light travels slower in a dark room (d) Pupils open very quickly in the dark

Q.4. Select out of the following a gland which does NOT occur as a pair in the human body

(a) Pituitary (b) Ovary (c) Testes (d) Adrenal

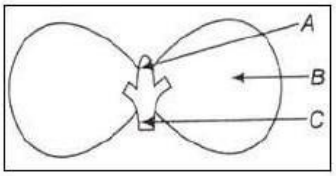
Q.5. The oxide which can react with HCl as well as KOH to give corresponding salt and water is-

(a) CuO (b) Al_2O_3 (c) Na_2O (d) K_2O

Q.6. Which of the following is an alloy of Copper and Tin

(a) Nichrome (b) Brass (c) Constantan (d) Bronze

Q.7. In the below figure the parts A, B and C are sequentially



(a) Cotyledon, plumule and radicle (b) Plumule, radicle and cotyledon

(c) Plumule, cotyledon and radicle (d) Radicle, cotyledon and plumule

Q.8. Among the following, which is not the function of testes at puberty

i. Formation of germ cells
ii. Secretion of testosterone
iii. Development of placenta
iv. Secretion of Oestrogen

(a) i and ii (b) ii and iii (c) iii and iv (d) i and iv

ASSERTION AND REASONING QUESTIONS (1 MARK)

Directions: In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:

(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion(A).
(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
(c) Assertion (A) is true but the reason (R) is false.
(d) Assertion (A) is false but the reason (R) is true.

Q.9. Assertion (A): Myopic eye cannot see distant objects distinctly.
Reason(R): For the correction of myopia, converging lens of appropriate power are prescribed by eye surgeon.

Q.10. Assertion(A): Urethra forms the common passage for both the sperms and urine.
Reason(R): It never carries both of them at the same time

SECTION - B

SHORT ANSWERS (2 MARKS)

Q.11. (a) Define a decomposition reaction. Write an equation to show thermal decomposition of Ferrous Sulphate crystals.

OR

(b) What is meant by a balanced chemical equation? Why is it necessary for an equation to be balanced?

Q.12. Name the gland and hormone secreted by the gland which are associated with the following problems:

(i) A girl has grown extremely tall

(ii) A woman has swollen neck

Q.13. Compound X and aluminium are used to join railway tracks.

(a) Identify the compound X

(b) Name the reaction

(c) Write down its reaction.

SHORT ANSWERS (3 MARKS)

Q.14. A convex lens has a focal length of 10 cm. At what distance from the lens should the object be placed so that it gives a real and inverted image 20 cm away from the lens? What would be the size of the image formed if the object is 2 cm high? With the help of a ray diagram show the formation of the image by the lens in this case.

Q.15. You are given two solutions A and B. The pH of solution A is 6 and pH of solution B is 8.

(a) Which solution is acidic and which is basic?

(b) Which solution has more H^+ ion concentration?

(c) Why is HCl a stronger acid than acetic acid?

SECTION - C

LONG ANSWERS (5 MARKS)

Q.16. (a) Three resistors of 6 a, 3 Ω, and 2 Ω are connected through so that the total resistance is greater than 6 Ω but less than 8 Ω. Draw a diagram to show this arrangement and calculate its total resistance.

(b) An electric bulb is connected to a 220V generator which draws a current of 0.5A. What is the power of the bulb

OR

(a) State and explain ohm's law.

(b) What is meant by 1 Ω resistant?

(c) An electric iron has a rating of 750W, 200V. Calculate the current required, the resistance of the heating element and energy consumed by the iron in 2 hours.

Q.17. (a) In the female reproductive system of human beings, state the functions of:

(i) Ovary

(ii) Oviduct.

(b) Mention the changes which the uterus undergoes, when

(i) it has to receive a zygote.

(ii) no fertilisation takes place.

(c) State the functions of placenta.

SECTION - D

Q.18. The generation of heat in a conductor is an inevitable consequence of electric current. In many cases, it is undesirable as it converts useful electrical energy into heat. In electric circuits, the unavoidable heating can increase the temperature of the components and alter their properties. However, heating effect of electric current has many useful applications. All electrical heating appliances are based on heating effect of current

(a) What is heating effect of electric current?

(b) Name two electric appliances based on heating effect of electric current.

(c) What are the properties of heating element?

OR

Explain how heat is produced.

Q.19. A newly married couple does not want have children for few years. They consulted a doctor who advised them barrier method and chemical method of birth control. Yet another couple who already have two children and are middle aged also consulted doctor for some permanent solution to avoid unwanted pregnancy. Doctor advised them surgical method of birth control.

(i) Identify the barrier methods of birth control.

(a) Condom

(b) Diaphragm

(c) Oral pills

(d) Both (a) and (b)

(ii) How physical barrier prevent pregnancy?

(a) They kill the sperms

(b) They kill the ovum

(c) They prevent sperms from meeting the ovum

(d) hey prevent intercourse

(iii) How chemical methods prevent pregnancy?

OR

What are the surgical methods of birth control?

KENDRIYA VIDYALAYA SANGATHAN, MUMBAI REGION

I- PRE-BOARD EXAM

CLASS XII SESSION 2024-2025

INFORMATICS PRACTICES (065)

MARKING SCHEME SET-I

Q no.	Section - A	Marks
1	(B) 0 , N - 1 1 mark for correct answer	1
2	(D) 2 1 mark for correct answer	1
3	(C) Switch 1 mark for correct answer	1
4	(C) Alter 1 mark for correct answer	1
5	(C) Active Digital Footprint	1
6	True 1 mark for correct answer	1
7	(D) savefig( ) 1 mark for correct answer	1
8	False 1 mark for correct answer	1
9	(A) df.to_csv('filepath') 1 mark for correct answer	1
10	False 1 mark for correct answer	1
11	(D) sum( ) 1 mark for correct answer	1
12	(A) PAN 1 mark for correct answer	1

<table>
<tr><td>13</td><td>(C) Scalar Values
1 mark for correct answer</td><td>1</td></tr>
<tr><td>14</td><td>(C) RESET
1 mark for correct answer</td><td>1</td></tr>
<tr><td>15</td><td>a 2
b 4
c 6
dtype: int64 (Ignore if dtype not written)
1 mark for correct answer</td><td>1</td></tr>
<tr><td>16</td><td>FALSE
1 mark for correct answer</td><td>1</td></tr>
<tr><td>17</td><td>(B) Iterrows( )
1 mark for correct answer</td><td>1</td></tr>
<tr><td>18</td><td>(A) Bar Graph
1 mark for correct answer</td><td>1</td></tr>
<tr><td>19</td><td>Protocol : https
Domain name : moz.com
½ mark for each correct answer</td><td>1</td></tr>
<tr><td>20</td><td>(C) Assertion is True But Reason is False
1 mark for correct answer</td><td>1</td></tr>
<tr><td>21</td><td>(B) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A)
1 mark for correct answer</td><td>1</td></tr>
<tr><td></td><td>Section - B</td><td></td></tr>
<tr><td>22</td><td>Pandas, Matplotlib
1 mark for each correct answer
OR
<table>
<tr><td>List</td><td>Series</td></tr>
<tr><td>List can be heterogeneous, it can store data of different datatype</td><td>Series is homogenous, it stores data in same data type</td></tr>
</table></td><td>2</td></tr>
</table>

<table>
<tr><td></td><td>
<table>
<tr><td>It does not allow vectorised operations</td><td>It allows vectorised operation</td></tr>
</table>
Or any other valid difference
1 mark for each correct difference</td><td></td></tr>
<tr><td>23</td><td>No she is not right to do, as E-waste contains multiple known or suspected neurotoxicants, such as lead and mercury, which may disrupt the normal development of the central nervous system during childhood and adolescence.
Or any other valid explanation
1 mark for stating No, 1 mark for reason</td><td>2</td></tr>
<tr><td>24</td><td>(A) SELECT DAYNAME(‘2008-02-20’);
(B) SELECT NOW();
1 mark each for correct query</td><td>2</td></tr>
<tr><td>25</td><td>
<table>
<tr><th>Static Webpage</th><th>Dynamic Webpage</th></tr>
<tr><td>A static webpage is one whose content always remains static, i.e., does not change for person to person</td><td>A dynamic web page is one in which the content of the web page can be different for different users</td></tr>
<tr><td>Generally written in languages like HTML,JavaScript and/or CSS</td><td>Dynamic web pages can be created using various languages such as JavaScript, PHP, ASP.NET, Python, Java, Ruby, etc</td></tr>
</table>
Or any other correct differences, consider example as difference
OR
<table>
<tr><th>Web Page</th><th>Website</th></tr>
<tr><td>A web page is a document on the WWW that is viewed in a web browser</td><td>A website is a collection of web pages related through hyperlinks</td></tr>
<tr><td>A direct URL link or a website can be used to access it</td><td>A domain address is used to access it.</td></tr>
</table>
Or any other correct differences, consider example as difference
1 mark for each correct difference</td><td>2</td></tr>
<tr><td>26</td><td>
<table>
<tr><td>DDL</td><td>DML</td></tr>
<tr><td>Data Definition Language</td><td>Data Manipulation Language</td></tr>
</table>
</td><td>2</td></tr>
</table>

	<table><tr><td>It is used to create Database and Table Schema</td><td>It is used to insert,update and delete actual data in a relation</td></tr></table> **Or any other correct differences, consider examples as differences** *1 mark for each correct answer*	
27	This is another kind of cyber crime where the attacker gains access to the computer and blocks the user from accessing, usually by encrypting the data. The attacker blackmails the victim to pay for getting access to the data, or sometimes threatens to publish personal and sensitive information or photographs unless a ransom is paid. **Or any other correct Explanation** **OR** <table><tr><th>Ethical Hacker</th><th>Non Ethical Hacker</th></tr><tr><td>An ethical hacker may exploit a website in order to discover its security loopholes or vulnerabilities.</td><td>A non-ethical hacker is the one who tries to gain unauthorised access to computers or networks in order to steal sensitive data with the intent to damage or bring down systems</td></tr><tr><td>He then reports his findings to the website owner. Thus, ethical hacking is actually preparing the owner against any cyber attack</td><td>Their primary focus is on security cracking and data stealing. They use their skill for illegal or malicious purposes</td></tr></table> **Or any other correct difference** 1 mark for each correct difference.	2

28	`import pandas as pd`
	`match = pd.DataFrame({'Points A' :[6,5,4],`
	`'Points B' :[4,7,6],`
	`'Points C' :['A','B','B']},`
	`index = ['Round_1','Round_2','Round_3'])`
	½ mark for importing pandas correctly
	1 mark for making column data of dataframe correctly
	½ mark for making row labels/index correctly.
	OR
	`import pandas as pd`
	`sales = pd.Series([120,140,88,250,125],`
	`index:['A','B','C','D','E'])`
	`print(sales.tail(2))`
		2

	½ mark for each correction made. *Complete 2 marks only if code is rewritten with corrections underlined.* *Deduct ½ marks for any other case.*	
	Section - C	
29	Any correct explanation stating : Reduce, Reuse, Recycle OR Dismantling, segregation of ferrous metal,non ferrous metal and plastic,Refurbishment and Reuse,Recycling/Recovery of valuable materials,Treatment/disposal of dangerous materials and waste. OR Collection, Storage, sorting, extractions and separation,cleaning of waste *3 marks for correct steps and brief explanation*	3

30	i) `import pandas as pd`
	`d = {'Day1':43000,'Day2':55000,'Day3':12000,'Day4':95000, 'Day5': 80000}`
	`s = pd.Series(d)`
	ii) `s[s>50000]`
	OR
	`import pandas as pd`
	`s1 = pd.Series([1200,1500,1300],index=['Jan','Feb','Mar'])`
	`s2 = pd.Series([1000,1250,1120],index=['Jan','Feb','Mar'])`
	`s3 = pd.Series([88,142,96],index=['Jan','Feb','Mar'])`
	`data = {'Revenue':s1, 'COGS':s2, 'PAT':s3}`
	`df = pd.DataFrame(data)`
	`print(df)`
	½ mark for importing pandas library
	½ mark for creating correct series each (1 ½ mark)
	1 mark creating correct dataframe
		3

31	`i)CREATE TABLE TOYS(ToyID int PRIMARY KEY,TName VARCHAR(20),Price int);`
	`ii) ALTER TABLE TOYS ADD BRAND VARCHAR(20);`
	`iii)ALTER TABLE TOYS ADD FOREIGN KEY (BRAND) REFERENCES BRAND(bname);`
		3

	OR iii)INSERT INTO TOYS VALUES (1012,'PUZZLE',699,'FUNWAY'); 1 mark each for correct query	

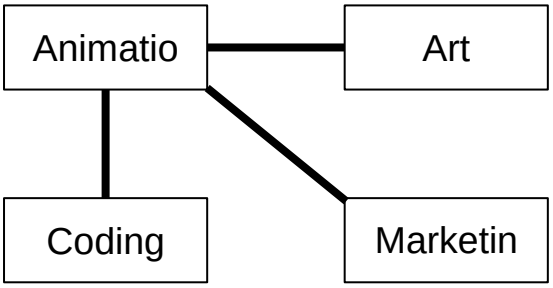
32	i) SELECT COMPANY,COUNT(*) FROM VEHICLE GROUP BY COMPANY;
	ii) SELECT * FROM VEHICLE ORDER BY PRICE DESC;
	iii)SELECT V.VID,V.MODEL,B.HQ FROM VEHICLE V,BRAND B
	WHERE V.COMPANY = B.BID;
	OR
	SELECT V.VID,V.MODEL,B.HQ FROM VEHICLE V
	JOIN BRAND B
	ON V.COMPANY = B.BID;
	OR
	i) SELECT SPECIALISATION, COUNT(*) FROM DOCTOR;
	ii) SELECT LEFT(SPECIALISATION,4) FROM DOCTOR;
	iii) SELECT P.PID,P.PNAME,P.DOR FROM PATIENT P,DOCTOR D
	WHERE P.DID = D.ID AND D.DNAME = 'Dr. Shafiya';
	OR
	SELECT P.PID,P.PNAME,P.DOR FROM PATIENT P
	JOIN DOCTOR D
	ON P.DID = D.ID
	WHERE D.DNAME = 'Dr. Shafiya';
	1 mark each for correct query
		3

	Section - D	
33	import matplotlib.pyplot as plt x = ['2021','2022','2023','2024','2025'] y1 = [52,53,57,51,58] y2 = [41,52,45,38,52] y3 = [25,30,39,48,60] plt.plot(x, y1,label = 'ABC') plt.plot(x,y2,label = 'XYZ') plt.plot(x,y3,label = 'RST') plt.xlabel('YEAR') plt.ylabel('SALES') plt.title('SALES COMPARISON OF ABC,XYZ,RST')	4

	plt.legend() plt.show() plt.savefig('Company.png') ½ mark for importing matplotlib library 1 ½ mark for correctly using 3 plot function with correct labels ½ mark for showing legends ½ mark for xlabel and ylabel both correctly ½ mark for title ½ mark for saving the figure correctly **OR** import matplotlib.pyplot as plt x = ['0-7','8-13','13-17','18 above'] y = [50,70,60,30] plt.bar(x,y,label = 'Coding Interests') plt.xlabel('Age Groups') plt.ylabel('No. of student per 100 Students') plt.title('Students Opting A.I. Education') plt.legend() plt.show() ½ mark for importing matplotlib 1 ½ mark for making data with correct values with label ½ mark for bar function ½ mark for xlabel and y label ½ mark for showing legend ½ mark show function	

34	i)SELECT * FROM MOVIE WHERE RELEASETYPE = 'OTT';
	ii)SELECT MIN(DURATION) FROM MOVIE;
	iii)SELECT * FROM MOVIE ORDER BY RATING DESC;
	iv)SELECT ROUND(RATING) FROM MOVIE;
	1 Mark for each correct query
		4

	Section - E	
35	(A) Animation, as it has maximum no. of computers.	5

	(B)  (C) i) Switch/Hub : All departments as all has many computers to connect. ii) Repeater : Animation to Marketing as distance is more than 100m. (D) Using Internet (E) Web Browser	
36	i) df['Voice'] ii)df['Total'] = df['Data'] + df['Voice'] iii)df = df.drop('Other',axis = 1) iv) df.rename(columns = {'Data': 'Internet'}) v) df.loc[['Delhi','Mumbai'],['Voice','SMS']] OR df.iloc[[0,1],[1,2]] 1 mark for each correct statement	5

37	i) SELECT COUNT(*) FROM PLAYER;
	ii)SELECT AVG(PRICE) FROM GADGETS WHERE TYPE='MOBILE';
	iii)SELECT MIN(DOJ) FROM EMP;
	iv)SELECT SUM(FEE) AS 'TOTAL FEE' FROM STUDENT;
	v)UPDATE PRODUCTS SET PRICE = PRICE + 100;
	OR
	i)SELECT UPPER(NAME) FROM STUDENT;
	ii)SELECT INSTR('MISSISSIPPI','SIP');
	iii)SELECT MONTHNAME(DOB) FROM EMP;
	iv)SELECT ROUND(2543.95,-2);
	v)SELECT RTRIM(NAME) FROM EMP;
	1 Mark for each correct query.
		5

*********END*********